

Among the personalities of modern Romanian painting, the place of Adam Bălănuș (1898-1982) is that of honesty and integrity, of respect for traditional assets. His art, in its whole evolution, has continuously been implanted in the Romanian reality and organically connected to the national artistic inheritance. An artist of calm meditation, full of tenderness in front of natural motifs, Bălănuș prais, in his paintings, simplicity and sincerity. Convinced that the quality of a work of art is determined, first of all, by the intensity of the feeling and the nobleness of the human message, under whose aegis intimate reactions of the creative process are developed, the painter combined, in his art, the vigor and firmness of convictions with modesty and kindness characteristic of his Moldavian descent, which contaminated his students at the Bucharest Fine Arts Institute. His refinement and sensitivity for colour coupled with a spirit of equilibrium and harmony, the discreet distinction of the feeling for measure, deciphered in his paintings, make his creation an art of authentic visual joy.

In his Moldavian landscapes with broad perspective ("Mountain Landscape", "At the Farm", "Early Spring", "Yard with Poplars"), his portraits of sensitive psychological investigation ("Reading", "Self-Portrait", "Two Figures"), his "flowers" and still lifes, with a natural composition where everything is harmoniously blended, impress by the honesty and solidity of execution and by the simplicity of the means the painter uses. Bound in a melancholy contemplation, the artist depicted on the easel also the slums: Street in Hugi, Old House, At the Barrier, Shops in the Province, Street in Bucharest, Sighisoara Landscapes. The expressiveness of his palette can also be defined by the discreet incantations of autumn landscapes, with subtle qualities of atmosphere. Equally impressive are the canvases in which he reflected Dobrogea's landscape or the sea: Village on the Seashore, Houses in Dobrogea, Road to the Sea. Finally, Bălănuș was attracted by the human factor integrated in the landscape, thus investigating other facets of reality. Paintings like Fair Periphery, Market Day at Cimpulung, Iasi Fair, Fair at Targu Neamt, Fair at Curtea de Arges, Cimpulung's Market are quite representative of his creation. They betray his inclination towards large crowds, the bustle and hubbub specific of fairs, mixing picturesque and dynamism with diversity and lyricism.

M. DUMITRU ■



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A VAST PROGRAMME OF ASSERTION OF WORKER DEMOCRACY

In his Exposition on questions of socioeconomic management, ideological and politico-educational work, and of the international situation made by the General Secretary of the Romanian Communist Party, Nicolae Ceausescu, at the April 29 meeting of the Executive Political Committee, a highly important place was assigned to the analysis of some of the most significant questions of socioeconomic management and planning in the current stage, with a view to establishing the necessary measures for the further improvement of the whole activity in full accordance with the resolutions of the Thirteenth Congress and National Conference of the Party in the perspective of the unfolding attainment of the on-going quinquennium's fundamental goal — Romania's transition to a new

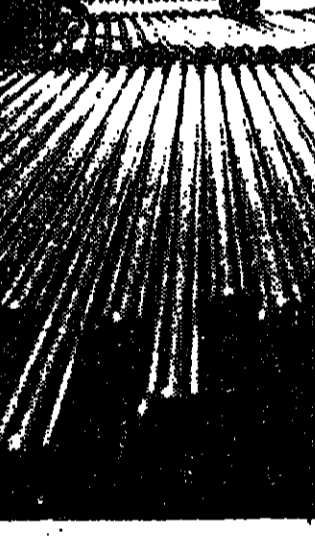
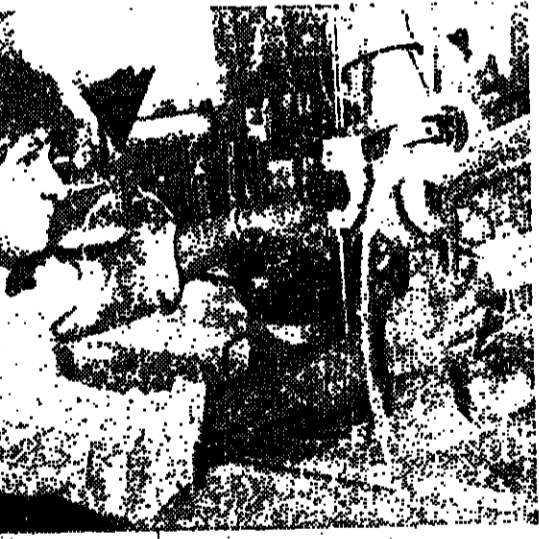
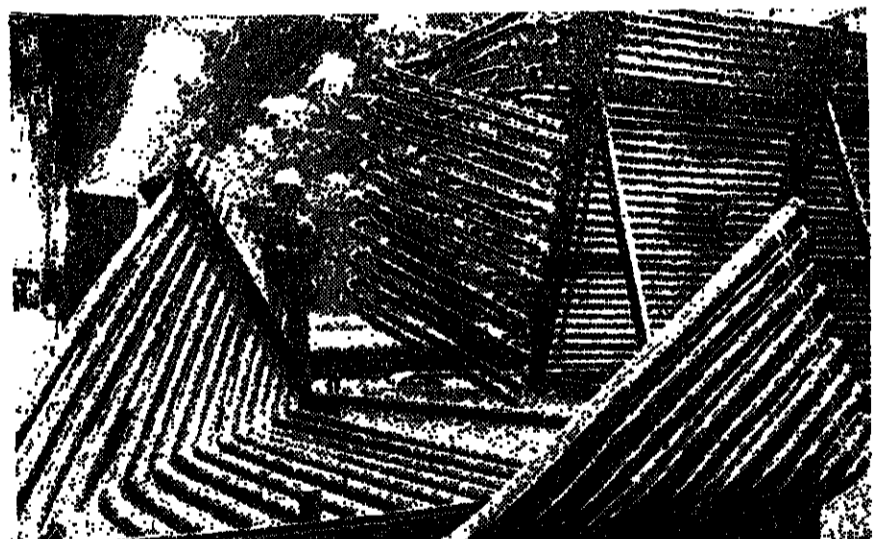
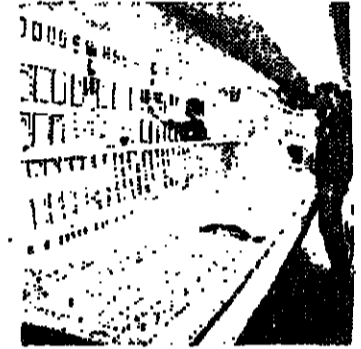
stage, that of a medium developed socialist country.

The realistic, profoundly analytic spirit in which socioeconomic management and planning questions are approached from the standpoint of scientific socialism principles at a time of significant transition of the national economy from extensive to intensive-type development, when broad prospects have been opened for the assertion of a new quality in all fields, confirms once again the exemplary way in which the party fulfills its highly responsible mission of leading political force in the work of socialist construction.

The strong assertion of the party's leading role in Romanian society after the Ninth Congress has been the lasting guarantee of the unfolding of a comprehensive process of improving socioeconomic organization, management and planning, apt to turn to better advantage society's material, technical and human resources, to give ample scope for manifestation to the tremendous creative values of the Romanian people, brilliantly confirmed along the centuries by remarkable contributions to the world civilization patrimony.

The outstanding achievements scored particularly after the Ninth Congress, which have radically changed Romania's very status among the large family of world states, fully support the conclusion, clearly emphasized by the Party General Secretary's exposition, that the general line and the strategy of development are fully correct, meeting both the objective requirements, the general laws,

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THE SPRINGS OF QUALITY

One of the most complex drives of the last few years is now in progress in Romania, aimed at the intensive development of the economy. Conducted in two stages — the first one took place in 1983, the second spans the 1987-1990 period — this drive is based on programmes of measures by branches, ministries, enterprises and enterprises worked out by specialists in research, education and production.

Efficiency norms for the whole 1986-1990 quinquennium were set in 1983. Some of them concern the volume of activity per 1,000 lei worth of fixed assets, which is to grow by 36 per cent in 1990 compared to 1983. Others refer to the acceleration of the rotation of circulating means. During the current quinquennium, the social product is to increase at an average annual rate of 8.1 per cent, compared to the 3.4 per cent increase in the necessary circulating means. In industry, where the volume of circulating means will grow by 26.3 per cent compared to 1983 and banking credits will be reduced, self-financing is to reach 79.8 per cent in 1990, against 60.3 per cent in 1983.

As a result of cost reduction, profitability and profit will record a dynamics superior to that of production, according to plan provisions. While marketable production in basic sectors will rise by 35.5 per cent in 1990 compared to 1983, profit will grow by 248.4 per cent, of which some 72 per cent will be the outcome of the reduction of spending per 1,000 lei of marketable output. The profitability rate is to stand at about 42 per cent in 1990, compared to 16.8 per cent in 1983.

Some 180 modernization programmes are under way for the main branches of all types of industry. Technological lines are being reorganised, manufacturing and assembly technologies are being improved.

(cont. on p. 3)

THE AGE
OF
ROBOTICS
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RECEPTION BY THE PRESIDENT OF THE REPUBLIC

IRAQI MINISTER OF OIL

On May 11, President Nicolae Ceausescu of Romania received Isam Abdul Rahim al Chalabi, Minister of Oil of the Republic of Iraq, co-chairman of the Romanian-Iraqi joint governmental Commission of economic, technical, scientific and trade collaboration.

During the talk, stress was laid on the wish to further expand Romanian-Iraqi cooperative links on multiple planes, in keeping with summit understandings. Emphasis was placed on the role of the joint governmental commission in singling out new ways and modalities of economic cooperation, to the mutual benefit of the two countries.

Approaching current aspects of the world political life, President Nicolae Ceausescu pointed out the need to solve the Iran-Iraq conflict peacefully, by way of negotiations, on the basis of resolution No. 598 of the UN Security Council, to mutual benefit, in the interest of the cause of international peace and understanding.

CONTRACTS SIGNED IN MILAN

Italy is Romania's second biggest business partner of the western countries.

The results of Romania's growing industrial potential are visible also in the structure of goods deliveries to the Italian market which consist in a proportion of 70 per cent of machines and equipment, chemicals and industrial consumer goods. A similar structure is displayed by Romanian imports from Italy, most of which are installations and apparatus, chemical, petrochemical and iron-and-steel products, raw and subsidiary materials for the light industry.

The industrial realm is also the framework of a sustained activity of bilateral cooperation on third markets, especially in the fields of machine and electrical engineering. Of the prestigious achievements scored in this respect, we should mention the work-together in tractor building in Romania, the assembly of ARO all-terrain cars in Italy and the delivery of CKD tractors to third countries.

The growth of the Romanian-Italian commercial links has brought about, among others, the consistent participation of Romanian exhibitors in the Great Fair of April, yearly hosted by Milan. As Emil Flegier, director in the Ministry of Foreign Trade and International Economic Cooperation, director of the Romanian participation at the Milan Fair, said, "The Romanian exhibitors' participation in the fair this spring stands out through the diversity of products on display, being the most complex Romanian exhibit in the Milan fair of the last few years."

The ten foreign trade companies which represented Romania at Milan 78 submitted to the specialists' and callers' attention products from the realms of electrical engineering, chemistry, light and food industry, wood industry and building materials. In the field of electrical engineering, ELRO-THORXPORTIMPORT put on view refrigerators and freezers, already known and appreciated by Italian housewives, lighting items, cables and electric equipment.

Chemistry was represented in the exhibit of CHIMICA foreign trade company by a wide range of organic Romanian drugs, such as Gerovital, Ascorvit and Biotin, as well as by cosmetics turned out in cooperation with world-famous firms. A large space was reserved for the light industry, from the sphere of which ARPI, MEX, ROMANEXPOIT and CONFEX displayed leatherware and footwear, leather and fur coats, knitwear, fabrics, sports items, garments for women and children, ready-made clothing, men's and women's accessories, and the most elegant hats. A favourable impression upon the public was made by the activity of bilateral cooperation on third markets, especially in the fields of machine and electrical engineering. Of the prestigious achievements scored in this respect, we should mention the work-together in tractor building in Romania, the assembly of ARO all-terrain cars in Italy and the delivery of CKD tractors to third countries.

The varied structure of the Romanian exhibit was noted by specialists, callers and the organizers of the fair, being its effect which the people is making under the Party's leadership, owing to certain shortcomings which are still manifest in the management and organization of activity.

Nicolae Ceausescu called attention to these essential questions and our homeland's development needs and possibilities. On the other hand, these achievements are eloquent proofs of the viability of the organizational framework created and constantly improved during this period, with a view to ensuring the broadest possible participation of all working people in the threefold capacity as owners, producers and beneficiaries, in democratically solving all the questions of socialist construction, in working out and implementing the party policy.

Assessing the results scored in the first two years of this millennium and in the first four months of this generous organizational framework, Nicolae Ceausescu affirmed that they were not commensurate with the efforts which the people is making under the Party's leadership, owing to certain shortcomings which are still manifest in the management and organization of activity.

(cont. from p. 1)

Incumbent on them in carrying out their plans. The formulation of this requirement is aimed at the promotion of a new outlook in the work of socio-economic management and planning, freed from subservience to departmental or other central economic bodies' control, which virtually means a misunderstanding of democratic management principles, of self-management and financial self-administration, and expresses a lack of confidence in the capacity of collective management bodies in enterprises and central and the over-estimation of central bodies' capacity. The whole outlook on the improvement of socio-economic management and planning aims at the more powerful assertion of that conception meant to impart a more committing, more efficient character to the management exercised by the collective bodies in enterprises and central through the operational solution, with their own means, of the problems they are faced with. Certainly, this new outlook must fight attitudes of passive expectation, of letting others "rack their brains" to

The special duty of party bodies and organizations at every level is that of turning to best account the virtues of the new democratic framework, the experience accumulated in this respect, the thorough study of economic and managerial questions, all matters related to present by party and state cadres in fulfilling, in good condition, the tasks entrusted to them, has a determining role. The exposition pays, from the point of view of improving socio-economic management and planning, special attention to the growth of the role of science and education in the entire socio-economic development. These activities have today a decisive importance not only in ensuring technical and technological progress, but also in substantiating development strategies, in elaborating and making decisions, in broadening the knowledge of the leading cadres, of all those who carry out their activity in the domain of socio-economic life.

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ROMANIA IN THE WORLD

ROMANIA ATTENDS WORLD FAIRS AND EXHIBITIONS

The Industry '88 world fair of Hannover at which Romania counts as a traditional participant opened the series of Romanian presence at such international economic and trade events to be held in the following first half of this year.

In the first half of the year the Romanian economy was well represented (with official pavilions and stands of products for each industrial branch) at international fairs held in Trippoli, Cairo, Leipzig, Dubai, Cologne, Paris, Nauru, etc. Most of the exhibits were new or updated products enjoying the interest of both specialists and businessmen. An evidence of this are the important trade contracts (for the current and the ensuing years) concluded on the sale of significant quantities of Romanian merchandise, supplied especially by machine engineering, electronics and electrochemical industry, precision mechanics and the optical industry, computer technology, chemistry and petrochemistry, metallurgy, industrial consumer goods and food products.

Throughout the year, Romania

will count among exhibitors at other scores of international fairs and exhibitions in towns of Europe (Milan, Brno, Budapest, Poznan, Leipzig, Rostov, Vienna, Zagreb, Leipzig (the autumn edition), Gdansk, Ploesti, etc. but also of other continents, such as Tokyo, Toronto, Algiers, Damascus, Tehran, Lima, Baghdad, Lima etc. It reflects Romania's wish to expand and deepen, also in this respect, its trade as well as economic and production cooperation with these countries, with all states of the world, regardless of social and political system.

At the same time, as we have already informed you, Romania itself will host an important economic and commercial event—the 11th edition of the Bucharest International Fair—an event which hundreds of manufacturing and exporting firms from across of European, Asian, African, North American, South American and Australian countries have already announced to attend.

T. PESCARU

COMMERCIAL SUCCESS AT HANOVER

Developed in the context of broadening collaboration with countries member of the European Economic Community, Romania's trade relations with the Federal Republic of Germany have known an upward course. The latter holds, at present, the sixth place in the hierarchy of Romania's commercial partners and the first among the industrial states with which Romania has business relations. Bilateral economic relations highlight the same characteristics for the whole Romanian foreign trade. Thus, there is a permanent improvement of the export structure in the West German market, a fact illustrated by the growth from 70.4 per-

cent in 1975 to 80 percent in 1987, of the share of Romanian goods with high processing degree in the machine building, metallurgy, chemistry light and wood processing industries delivered to West Germany.

The collaboration between Romania and West Germany also includes an active cooperation in production especially in sectors like metallurgy, machine building, electronics, electrical engineering, optics, chemistry etc., high tech products being obtained: ship engines, tractors, and protection objectives, pest killers and herbicides, industrial installations, etc.

In this context, eleven of the most important Romanian fore-

ign trade companies participated, this spring, in the international technical fair in Hannover.

Willing to maintain and deepen contacts with the traditional West German business partners, to cement firm links between the trade with Romania and to present the public a conclusive image of the level reached by industry, the Romanian exhibitors displayed in their stand a wide range of products from the fields of metallurgy, iron and steel, electronics, electrical engineering, machine building, fine mechanics, chemistry and petrochemistry, transport, etc. Mention should be made, as an example, of the computer-assisted automatic testing equipment, the computer-aided interactive design system of electric printed boards, colour and black-and-white monitors, radio-receivers and TV sets, radiocassette recorders and audio centres, presented by Electromechanica.

Also we must point out the exhibit of Uzineexportimport which included the model of the 150,000 dwt universal cargo carrier, and of the 350,000 dwt bulk carrier, of other types of ships and hoisting equipment, as well as the offers of Industrialexportimport and Auto Danubius installations for the chemical and food industries and the well-known and appreciated ARO all-terrain cars. The Romanian exhibition was rounded off by household and consumer electrical engineering appliances (Electroexportimport), transport installations (Mecanoexportimport and Contranexportimport), metallurgical products (Metallurgexportimport), photoacoustic materials and bearings (Technoexportimport), items made by the small industry (Scopexexportimport).

A special interest was aroused, among the specialists and the public by ARO-10 all-terrain cars, bearings, cables, lamps, hand tools, metal items, containers, etc. The appreciation enjoyed by the Romanian products in the above-mentioned event also had direct results at commercial level. Thus, enterprises like Metallurgexportimport, Electroexportimport, Technoexportimport, Uzineexportimport, Mecanoexportimport, Contranexportimport, Industrialexportimport and Auto Danubius signed important contracts providing the delivery, to West Germany, of machine tools, tools, household metal appliances, lamps, cables, refrigerators, electric motors, containers, iron and steel products, etc. Also during the fair, was celebrated the export of other Romanian products, such as synthetic fibre and yarn, furniture and other wood products, ready-made garments, knitwear, fabrics, footwear, etc.

Taking into consideration the public and commercial success, which is more prestigious as it has obtained in the conditions of high competition, it can be said that the presence of Romanian exhibitors in the international technical fair of Hannover, the 1988 edition, was concluded with a fruitful balance sheet on all planes, which makes a substantial contribution to the further development of the fruitful trade relations between Romania and West Germany.

ALEXANDRU MARINESCU

A WIDE RANGE OF PRODUCTS

While before World War Two there were barely two wire factories in Romania, today there are several wire and wire products factories distributed throughout the country. Most of them were built or updated after 1980 and have been fitted with modern equipment and high-tech installations. All of them export high-quality wire and wire products, within the required tolerances and of the types and sizes requested.

First we should mention the wire and wire products of the Buzău and the metalurgical works of Cimpia Turzii, then, the new metallurgical enterprise of Borsane, just like the older Cabul Românească enterprise of Ploiești, the wire, nail and chain enterprise of Galati, and the wire department of the Republica plant in Bucharest. These enterprises, turn out wire with diameters ranging between 0.30 and 5.5 mm, cold drawn, hard, soft or semi-hard, annealed and copper-plated. These types of wire are used in industry and other branches, both as such or in such products as metallurgical knifings, drawing cables, cables for hoisting machinery, fabrics for networks used in the rapid succession of finished products incorporated in nails used for reinforcing concrete, as well as other products utilized in agriculture and the light industry.

The standards in keeping with which they are made are all those used worldwide: DIN, GOST, ASTM, JIS etc. Although the presence of international circumstances are not very favourable to these products, Romanian wire and wire products exports grow continually, thanks to the serious mindsets and technical know-how of the firms in the Middle East (Arabia, Lebanon, Egypt etc.), in Communist countries (USSR, Cuba, etc.) and in the West (USA, Canada, etc.).

These products are the main partners of the Metallurgexportimport, Uzineexportimport, Industrialexportimport, Auto Danubius, Contranexportimport, Mecanoexportimport, Technoexportimport, Electroexportimport, Scopexexportimport, and Metallurgexportimport enterprises.

which delivers these products abroad.

Moreover, cooperation relations with various foreign partners have been initiated for the execution and delivery of wire products to various markets and, upon request, Romania considers any kind of technical or commercial collaboration. Manufacturing methods are diverse: chemical, through hardening, cold drawing, annealing, etc. The treatment to which our products are subjected results in the following two basic qualities: hard or softness.

Hard wire is used for the most varied purposes: for springs, valves for internal combustion engines and gun strings for musical instruments. The "metal wool" made at Cimpia Turzii Metallurgical Plant is a more sophisticated product used as fabric for technological filters and for decorative purposes. Containers and devices made of wire have a period character in the world of "wire".

The best wire, with high technical parameters is the installation in equipping hoisting machinery, for the most complex installations in the heavy industry. Obtaining raw materials for the wire and wire products is a complex task, requiring the use of high-tech equipment and the rapid succession of finished products incorporated in nails used for reinforcing concrete, as well as other products utilized in agriculture and the light industry.



find the best solutions to the questions cropping out in enterprises, at a given moment. The persistence of the bureaucratic practices seriously affects the opportunities to adequately settle development problems, which can no longer be solved on the basis of the capitalization and with the stock of experience, initiative and skill of the working people, of the large number of experts staffing enterprises and central departments.

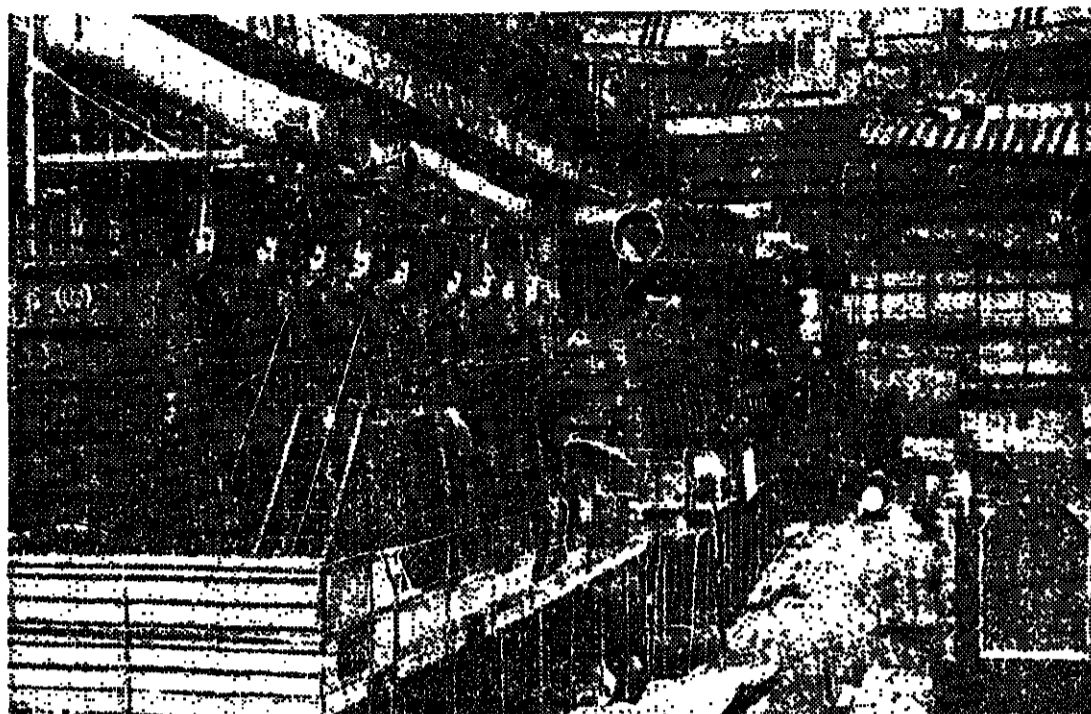
The essence of the improvement drive steadily promoted by the party at this stage is the consolidation of the democratic side of the management, through a broad involvement of all working people in the debate and settlement of questions cropping up in their field of activity. It is in this way that we should understand the, so-called, broad debate of all questions may be ensured, and the most made in the exposition according to which however, enterprise may be set for the central bodies cannot substitute themselves for the decisions and decisions of the management by enterprises and central of the responsibility

look, criticism and self-criticism gain a new meaning in improving the management system, being understood as an analysis and work improvement method and not as a justification of shortcomings. By exercising self-criticism in the spirit of the norms of party life, the strengthening of personal responsibility, a guarantee of better functioning of collective bodies, should be ensured, order and discipline should be set up in all domains of socio-economic activity, the responsibility of each enterprise, the responsibility of each working people in solving the tasks incumbent on them should increase.

The exposition of the Party General Secretary declares, in this perspective, a wide space to the questions of carrying out policy in general and of the activity of improving the knowledge of leading cadres, of the working people, of the responsibility of each enterprise, the responsibility of each working people in solving the tasks incumbent on them should increase.

delimits a framework of greater commitment of scientific groups and bodies, starting with the National Committee for Science and Technology, in elaborating development plans and programmes. Also the Academy of the Socialist Republic of Romania, specialized academies and specialized research institutes have the duty to more actively participate in the management activity of ministries, central, various socio-economic units. The whole scientific research front should forcefully make its contribution to elaborating the country's development strategies and plans, in carrying them out, and in the broader application of specialized research conclusions in substantiating the decisions and management of the socio-economic life.

Millions for the first application of management and planning principles based on self-management and self-administration, for the responsibility of each enterprise, the responsibility of each working people in solving the tasks incumbent on them should increase.



IS THERE A CEILING OF HEAT ENGINE PERFORMANCES?

The development and diversification of Romanian heat engine production called for the setting up of a forum to coordinate research in this field. More than a decade ago, the National Institute of Heat Engines was founded, which assumed the task of integrating research with productive activity, and of training engineers. Three years after its inception, the first national symposium on heat engine construction technology was held under the aegis of the young research institute. The symposium highlighted the existence of a powerful contingent of researchers with a valuable creative potential. The ensuing years further justified the initiative of creating this new laboratory, by involving research in productive activity, with notable results.



Lucian Teodorescu, director of the National Institute of Heat Engines was rather reserved in assessing the achievements in his own field of activity. This is due to his dissatisfaction with the present limits of the efficiency of the heat engine, which fails to secure it a privileged part among energy consumers. Considered from this angle the heat engine seems to be a spoiled yet indispensable fuel consumer. But, the same as the greatest sportsman has a "ceiling" let us admit also a ceiling for the heat engine, ignoring its detrimental effect. However, beyond its limits, one cannot deny the great utility of this type of engine, its wide-scale utilization in the key sectors of everyday life. Hence the last few years' achievements of the National Institute of Heat Engines. "Our institute," my colleague told me — "has produced the diesel-gasoline convertible engine for all-terrain cars and utility vans. The dieselization and modernization of the gasoline engine has resulted in a high-performance engine for cars. The same performance have been attained by heavy traction vehicles. Moreover, diesel engines have been developed for 190-, 130-, 100- and

six-cylinder tractors, which has enabled one to diversify the range of farming machines. The lorry engine has also been modernized through the adaptation of the turbosupercharge, an



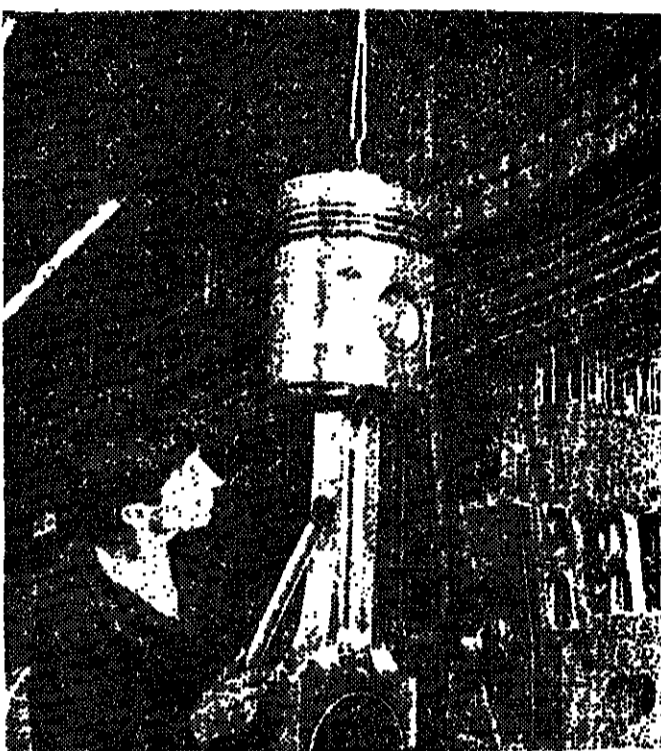
OPTIMISTIC ABOUT THE FUTURE

Falling in the same sphere of concerns — finding new efficient solutions for cutting fuel consumption, improving the engines' technical operating parameters — are the endeavours recorded at the laboratory for fuels, lubricants, tribology and polluting processes. A reserve solution has been homologated here: the fueling of engines with a mixture of 50 per cent gasoline and 50 per cent methanol. The method offers the advantage of using low-grade gasoline (ON 75). A last minute

novelty is a method of using methanol with diesel engines. In collaboration with ICITIR Ploiesti, new types of materials with self-lubricating properties have been homologated, using mixed and synthetic oils in poor-lubrication conditions.

Moreover, research has been directed with significant results towards reducing the running-in period, which would implicitly lead to a lower fuel consumption and greater reliability.

The manufacture of elastome-



A LOW-CONSUMING CAR

"Of late" — my colleague went on — "our institute has created the first fully Romanian-designed city car. Dacia 800 Lastun. This year it will go into serial production in Timisoara. This baby car was carefully conceived at our institute and we already regard it as a success of our activity. Naturally, we are waiting for the buyers' opinion too."

"What are the current lines of research?"

"We have set out to update all the engines being manufactured in this country, in keeping with world parameters. We aim to reduce consumption and specific weight. We have reason to expect performance above world average values in future, which will increase the competitiveness of Romanian heat engines. Interdisciplinary collaboration with other institutes in the field, as well as with the respective departments of the polytechnic institutes is already a guarantee of significant achievements."

Engineer Radu Albocanu has offered us some extremely interesting information on the contribution of the laboratory for supply processes and equip-

ment to the building and improvement of heat engines. "Between the two poles — cutting consumption and pollution — for which solutions are equally imperative, the laboratory's researchers have revealed still unexploited reserves. Thus, variable distribution, developed jointly with the Bucharest Polytechnic Institute allows of reducing pollution and fuel consumption by 10 per cent in the common areas of car utilization. The verification of the reliability of this solution makes possible the issue of a final verdict and, naturally, the generalization of the system for serial production."

"Another high-performance piece of equipment is the electronically controlled injector which makes possible a 15-20 per cent reduction of consumption with industrial engines. Until the end of this year, the laboratory's researchers plan to achieve an experimental engine model that should include these components."

In their opinion, the reserves held by the current Dacia 1300 car engine allow of a 15 per cent reduction of fuel consumption."

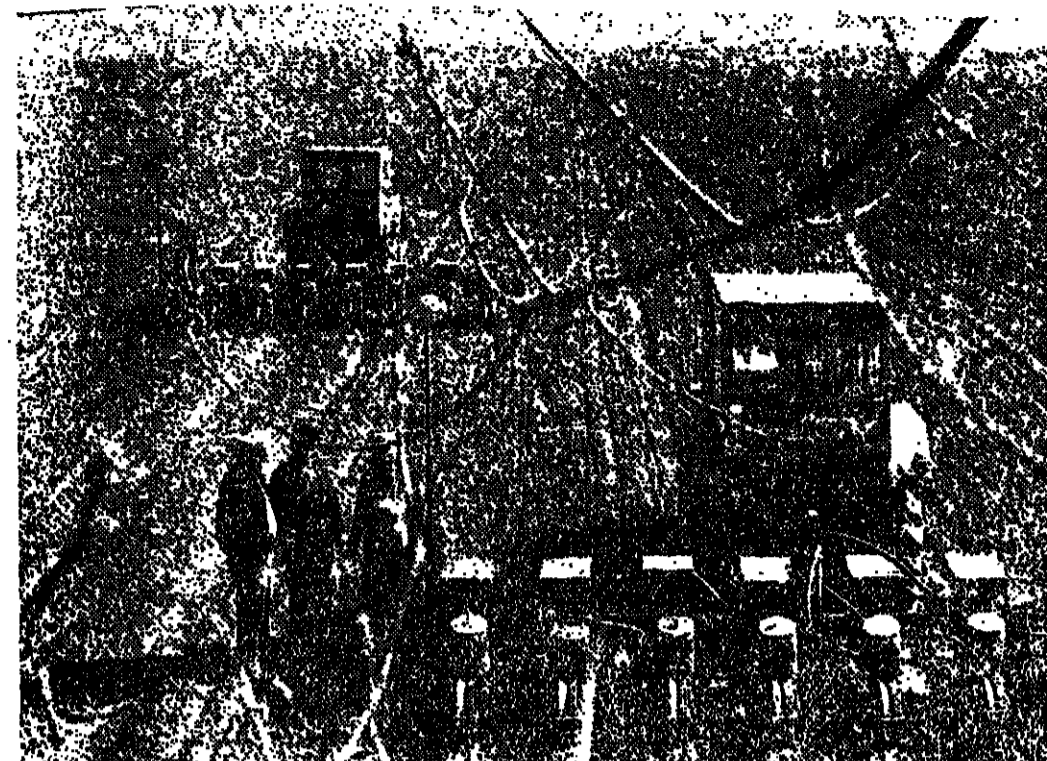
chante parts has also become an efficient widely applied solution. The elastic coupling between the engine and the gear in eight types and sizes for engines ranging between 30 and 8-10,000 HP has been put to a small-scale test. The head of the laboratory, Nicolai Dinu, spoke to me about the efforts being made to achieve equipment for car engines that should meet the most severe rules, such as the American federal rules.

Important sources of boost efficiency are offered by the utilization of heavy or used fuels for large engines.

Nicolai Dinu also referred to the utilization of ceramic materials in building heat engines. Forecasts for the end of the millennium show that the ceramic engine will adequately meet long-term requirements. Let us only mention that such an engine boasts an up to 50 per cent higher efficiency. The use of ceramic elements considerably reduces the consumption of materials which are in short supply, sound and chemical pollution, the weight and complexity of construction of heat engines. And this set of technological solutions, some of them in a forward stage of completion, justify an optimistic vision of the future of heat engines."

MARILENA TUTILA

THE CONFIRMATION OF PRODUCTION



WHAT WE SOW, HOW MUCH WE REAP

The Institute of Research in Cereal and Technical Crops of Fundulea and the territorial stations it subordinates have provided parental forms and seeds of superior biological categories for the whole area. They have done the same for the area under sunflower. Naturally, the seeds, differing from one area to another, were accompanied by detailed recommendations regarding the cropping technology, depending on the climatic conditions.

"This year each researcher has participated per-

sonally in the spring campaign in a large farming unit, granting specialized technical assistance", said engineer Nicolae Guranianu, technical director of the Fundulea Institute.

Crop maintenance and pest fighting recommendations have already been issued for the autumn cereals too. Mentionworthy is the fact that a considerable share among cereals is held by new strains created at Fundulea and other experimental stations.

RESEARCH PROGRAMMES

"Fundamental research accounts for about 30 per cent of the Fundulea Institute's activity", said engineer Nicolae Guranianu. "Genetic, physiological and biochemical studies of the plants pursue the creation of new strains and hybrids boasting a big yield potential, a high content of useful substances, and resistance to diseases, and unfavourable environmental conditions. The much-sought-after strains must also tolerate well mechanized works, adapt themselves to intensive cultivation and turn to best account the water and fertilizer. Equally complex are the questions related to the optimum cropping technology."

Then our colleague facilitated an extensive look at the programmes worked out by the Institute in the context of the new agrarian revolution sweeping Romania.

The research activity is conducted within 15 programmes dealing with wheat, rye, triticale, barley, two-row barley and oat, corn and sorghum, soy bean, pea, grain leguminous plants, sunflower and other oily plants, flax, hemp and cotton, hops, fodder crops, etc. Then, there are research programmes focusing on the production and technology of cereals, technical and fodder crops needs, research programmes of genetic engineering, biotechnology and genetic resources, etc.

The photos on this page bring together, not at all accidentally, a moment from the spring sowing campaign and two important aspects of scientific research activity. From research programmes aimed at a fertile application both in enriching the soil and in the production of seeds, we are talking about with newly highly productive varieties and in the utilization of the technologies available to each crop. Researchers also provide specialized assistance for mechanized operations.

intensive zonal agroecosystems, the phytonemes and other alternative energy sources, the elaboration of technological requirements and design themes for farming machinery and equipment needed for plant production works, and others.

All these programmes include 200 themes with over 1,250 experiments to be performed by both the Institute's central body and by other research units.

The about 250 breeds and hybrids of cereals, technical and fodder crops created over the last few years on the experimental plots of the Institute have opened Romanian agriculture the prospects for harvesting bumper crops. Thus, the wheat strains created in the past few years are credited with a productive potential of 5,000-10,000 kg per ha, corn hybrids with up to 20,000 kg per ha and sunflower ones with over 5,000 kg per ha.



Orienting farm research towards the immediate problems of large-scale production is naturally a response to the interest taken by the latter in scientific novelty. Most significant is the fact that this year the state farming enterprises, just like the cooperative farms have purchased large amounts of seeds from the newly homologated strains. Significant interest was aroused by the Arisan (early, disease resistant, recommended for Transylvania), Albota (better adapted to the podsol in the southern sub-Carpathian area), Aniversar (early, meant for northern Moldavia), Fundulea 3 (intensive, resistant to bending) and Simnic 30 (very early) strains.

With barley, the last homologated strains — Miral, Productiv and Piceco — cover nearly the whole area cultivated last autumn. They provide for a 25-45 per cent increment over the older strains and makes harvesting possible 11-15 days earlier. Two new intensive breeds of the autumn durum wheat — Rodur and Topas — have been created, which are suited to the pedoclimatic conditions in this country.

After the TF-2 critical strain created at Fundulea, a new ge-

otype — Vladausa — is now credited with a higher biological potential likely to turn to best account the less fertile podsol, in the hilly area.

Over the last two decades, 55 hybrids of rye have been created. The recently homologated ones yield 15 tons of grain per unirrigated ha and 20 tons of grain per irrigated ha. Hybrids such as Fundulea 32, Fundulea 420 and Fundulea 418, Sucova 108, Podul Inaltet 101 or Turda 183 have confirmed their qualities not only on experimental plots but also on large areas, in most diverse pedoclimatic conditions.

Now, when nearly the entire quantity of seeds has been sown, engineer Nicolae Guranianu thinks he has every reason to be optimistic. The ongoing agricultural year has started under the best auspices. The precipitation, within normal limits, has restored the reserve of water in the soil. The early spring favoured the plants having acquired a sufficient amount of thermal degrees. So far, every condition exists for Romania to reach the ambitious objective lying before agriculture this year: obtaining 35 million tons of cereals.

GIL OSTROVEANU

Researches conducted on the building sites of the Enterprise for the Execution and Operation of Land Improvement Works in Ialohu have led to the conclusion that optimal pitch, a by-product obtained in the curing section of the Galati iron-and-steel works, can successfully replace cement in joining concrete slabs along irrigation canals. The new method has been applied at the Trecut irrigation system. Physical pitch costs three-to-four times less than cement.

Here is another interesting technical solution: the erection of earthen walls for flattening soil erosion on ravines. And here is its economic effect: production costs are reduced ten times (compared to those required by concrete dams), while the cement and energy consumption is eliminated.



A PROFITABLE MODEL

Georgehe Leca is a veterinary surgeon. Until 1973, life followed its natural course, but that year marked the beginning of a new path at the end of which was awaiting him the office of manager of the inter-cooperative economic association for poultry breeding at Olteni. Four cooperative farms — Viteazii, Chirsoia, Necesti and Olteni — had decided to bring together their monetary funds and labour force to set up an avianational complex specializing in egg production.

In 1974 the foundation of the poultry farm was started. It was to be 1981, the first production year. 64 million eggs were obtained in the two buildings set into operation. Besides, it seemed better to have 77 million eggs. Then more than 10 million eggs were produced in the buildings, which were the farm's constant capacity, and the farm's growth capacity and profit were commensurable. These figures, which had attracted the attention of the Order of Agricultural Merit, were the result of a model which had proved viable and profitable — was awarded the Order of Agricultural Merit.

G. MARIAN



MAPS OF THE HUMAN BRAIN

Special programmes on computer-aided medical assistance. The importance of computers in deciphering the cerebral potentials of man and animals worked out through automatic data processing. Tridimensional analyses of the human brain carried out on the independent 100, M-18 and M-118 Romanian-made computers.

The event, staged jointly by the Ministry of Health, the Union of Medical Sciences Societies, the Research Centre of the Academy of Medical Sciences and headed by one of the modern amphitheatres of the Clinic Hospital in town, brought together

doctors, biologists, mathematicians, informatics scientists from Bucharest, Craiova, Timisoara, Satu Mare and, naturally, Tirgu Mures.

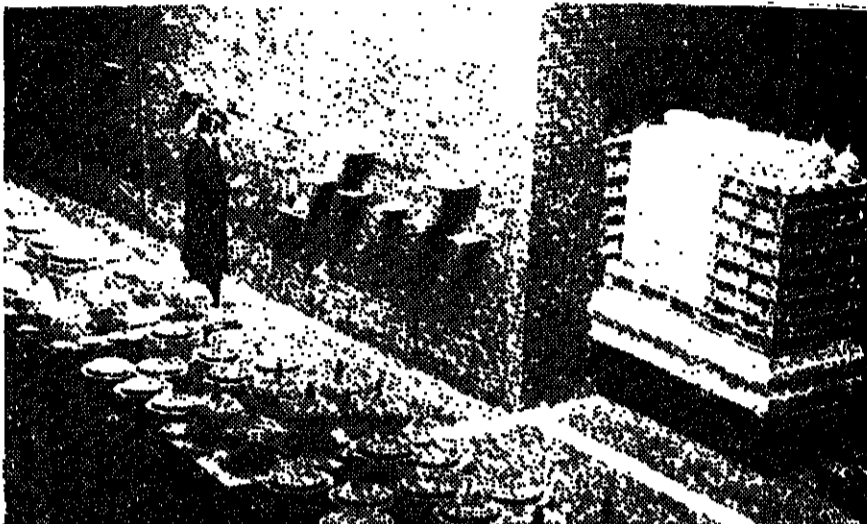
The choice of Tirgu Mures as host of the meeting was not accidental. Here, following a consistent research work — both applicative and fundamental — numerous remarkable results have been obtained, some of them being firsts in this field. Thus, the neurology clinic headed by professor Liviu Popoviciu (the author of over 500 scientific works published in Romania and abroad), where numerous scientific monographs, treatises and encyclopedias have been compiled, has recently obtained the first computerized colour encephalographic map, which is a world first. Our photo features Dr. Sinos, one of professor Liviu Popoviciu's main collaborators, monitoring the human brain's electric activity on a computer display.

M. CONSTANTIN ■

OLD METHODS, NEW METHODS

One of the most recent achievements of the Poroloseni Enterprise in Alba Iulia is the cup glazing machine — a complex plant having remarkable technical and functional properties providing for a substantial growth of the products' quality. The plant follows another recent technical creation — the glass cleaning installation — which, while replacing the old working method, allows of a better separation of alien particles from the glazing mass and thereby improves the aesthetic look of the products. The Poroloseni Enterprise has also developed a fast setting burning kiln making it possible to improve the manufacturing process at the respective stage. The high performance of the equipment translates among others into a growth of labour productivity and lower energy consumption.

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THREE OIL HORIZONS

The geological team of the Maramures Geotectonic and Exploration Enterprise working at Visu de Sus has finalized a new research project in just one year. We are referring to the commissioning of the Bala Baga oilfield of the extraction well which will make it possible to start exploiting the Colbu deposit at the end of this millennium (until now such an undertaking would have lasted five-to-ten years). The new well, equipped with a Romanian-made extraction machine, unites the oil horizons: the building required the application of original water capturing and draining technologies and use of modern technical solutions for mounting the extraction machine.

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TEV - 100

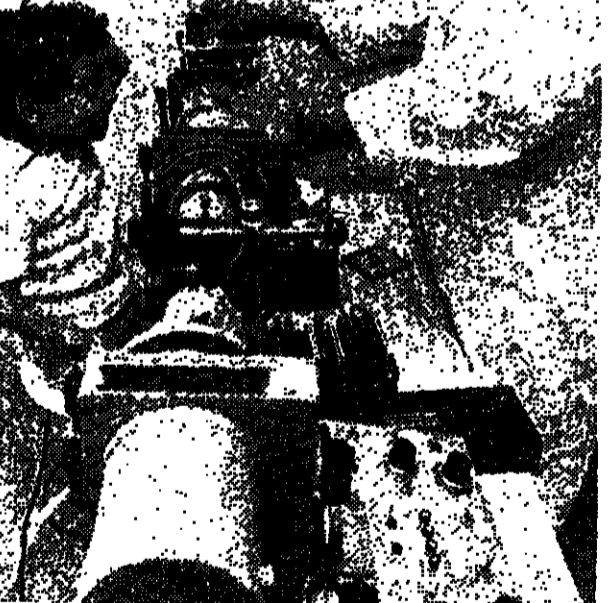
This is the first Romanian wind turbine with a power of 100 kw. Its experimental model has been recently finalized within the Laboratory for Eolian Power Capitalization at the Scientific Research and Technological Engineering Institute for Farm Machines and Equipment in Brasov. The model mounted in the Institute's testing grounds — a wind turbine with vertical axis, with two curved blades has an electric generator with a power of 100 kw, the most powerful one made in this country so far. The turbine has an aerodynamic shape, a high resistance and can function even when the wind has low speeds — between 1 and 30 m/sec.

The experts of the Institute of Scientific Research and Technological Engineering for the Mechanical Engineering Industry have worked out a rapid technology of ungrounding parts with the help of ultrasonics in organic solvents. The method, guaranteeing an in-depth cleaning of metallic surfaces and the removal of impurities from pores, is the only way of cleaning parts thoroughly.

The technology can be applied in foundries, for removing sand particles resulting from the casting process before and after the heat-treatment operations, in dye works, metallic-cable workshops, between the processing operations or before the final parts check and for cleaning components inaccessible to conventional cleaning methods.

OVER 80,000 APARTMENTS

The urban dowry of Arges county localities has been enriched, this year, by 720 apartments, 130 more apartments than the plan provisions. The total number of apartments built for working people in the county, in the last 20 years, has reached 80,000. At present, 82 percent of the urban population, in this county area, lives in new apartment houses.



ENERGY RECOVERY IN THE TEXTILE INDUSTRY

A patent was recently granted to the invention of the specialists at the Institute for Technological Design for the Light Industry concerning the recovery of thermal energy from waste water in the textile industry. The method envisages the selective capturing and processing of heat carried by waste water, according to their physico-chemical characteristics measured at the discharge points, followed by the introduction of the working agents into economizers adequate to one's purpose.

The utilization of this solution cuts fuel consumption by 14-15 per cent, that is, by an average 400 tons of conventional fuel a year in the dyeing, bleaching, heat washing and mercerizing processes in the textile industry.

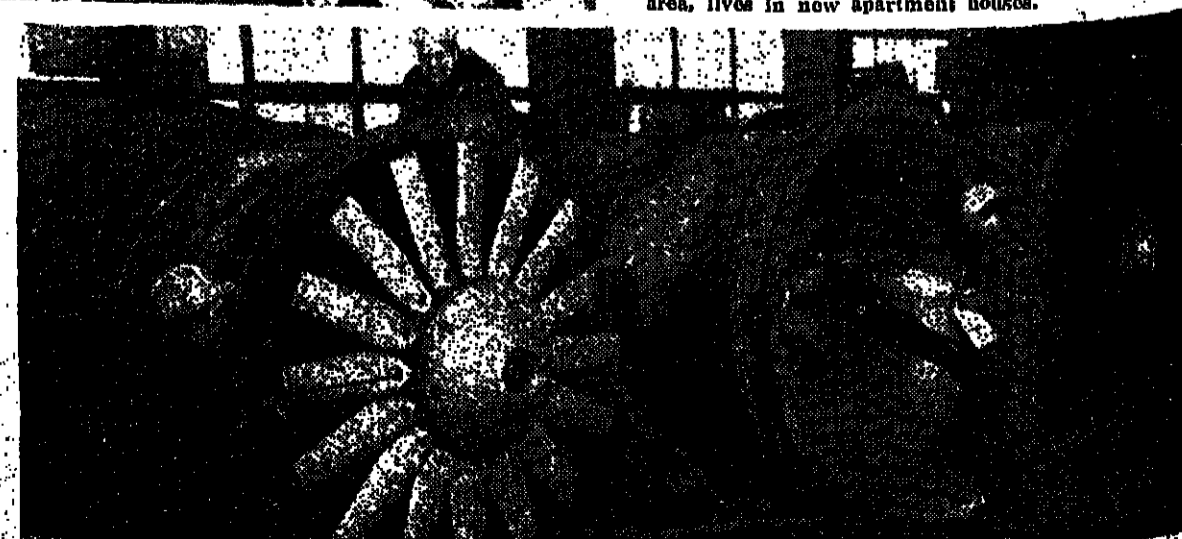
THE SECOND TURBO-GENERATOR

The builders on the construction site of the Suceava thermopower plant are now concentrating their efforts on the early commissioning of the second turbo-generator. They are intensively working at weldings and the mounting of the second pressure system boiler and the

water and steam supply circuit, needed by the power group with a view to starting hydraulic tests. At the same time, the thermo-mechanical equipment is mounted in the power house, the pre-assembly operations being effected at ground level.

COMPUTER-ASSISTED METAL CUTTING

The ventilator enterprises in Bucharest have developed a programme system for computer-aided metal cutting, which favours the more rational use of the metal, the growth of labour productivity and of the quality of execution. Other measures applied recently pursue the increase of the machines' equipment and installations' multipurposefulness, the redesigning of ventilator families, the assimilation of more types and sizes, as well as the automation of various welding operations. By promoting original technical solutions and the new technologies, this year alone the above-mentioned enterprises have recorded a production increment worth over two million lei.



THE AGE OF ROBOTICS

Presently there are some 25,000 robots in the world and estimations have it that by 1990 there will be approximately 200,000 of them. The importance and dimensions acquired by the design, production and usage of robots in the world have led to the conviction that robotics will generate the third industrial revolution.

The wide-scale introduction of robots in industry is a firm choice of the Romanian economic policy. Though recent, Romanian preoccupations in the field of robotics are quite diversified, boasting numerous achievements. Further down, we shall present a series of performances of the research and design activity carried out by enterprises for mounting robots engaged in the complex process of robotization.

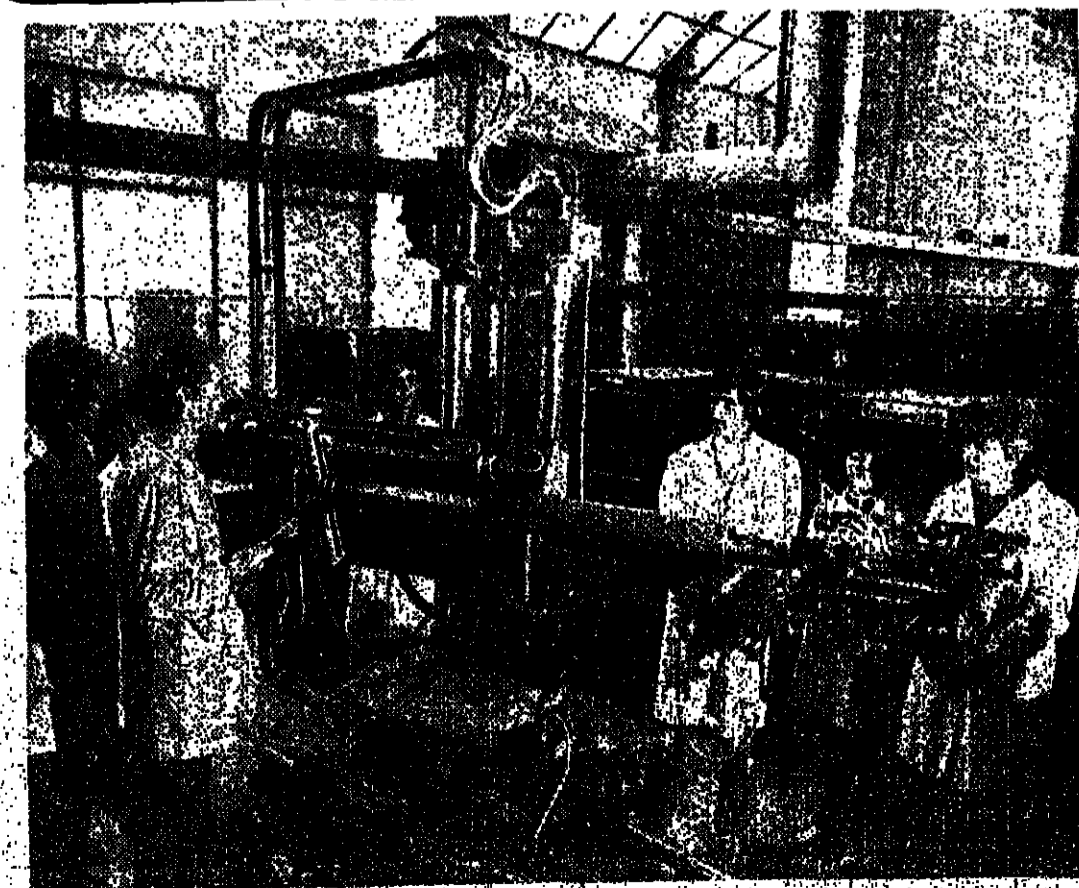
THE FIRST ROBOTS

The Automatics enterprises in Bucharest count as one of the principal makers of industrial robots. The list of robots manufactured by Automatica was opened by RIF 0.2, a solar coordinate industrial robot, with a mobile payload of 6.3 daN, five degrees of freedom and a pick-and-place accuracy of 0.5 mm. Its prototype was designed in 1980 by a joint team of specialists from the Automatics enterprise, the Institute of scientific research and technological engineering for automation (IPA) and the Institute of scientific research and technological engineering for computer technology and informatics (ICSI-TCH). For an view at the Bucharest International Fair in 1981 and 1982, awarded the Prize of the Academy of the Socialist Republic of Romania in 1982, RIF 0.2 confirmed its efficiency from its first use as part and parcel of production programmes, namely in a continuous-welding cell set up at the Autobloc enterprise in Bucharest. The next beneficiaries were Electroaparataj in Bucharest and the mechanical enterprise at Mirsa. Presently, the mounting enterprise of Pilest is testing two continuous-welding robotized cells with RIF 0.2.

Other achievements and the prospects of this robotics-related enterprise were presented to us by engineer Gheorghe Iancu, head of the Industrial robots production department: "This year's agenda of Automatica's accomplishments has already registered a family of fixed and mobile manipulators able to carry a 150-kg heavy payload. We propose ourselves to make the prototype of six-degrees-of-freedom industrial robot specializing in spot welding and an assembly robot. We also plan to introduce in the production line reduction gear which is a vital component in ensuring the repeatability of precision of a robot. At the same time, learning from our experience that it is easier to make a robot than a robotized application, we focus our attention on the production of robotized cells which include both robots and manipulators, practically aiming at becoming suppliers of turn-key robotized applications."

NUMEROM 770

A control equipment for evolved robots, meant especially for mounting robots; the system has artificial intelligence elements; it is made in a MULTIPROM solution (typical module system, AMS bus, printed circuit boards of the double Eurocard type) and ensures the simultaneous control of two robots.

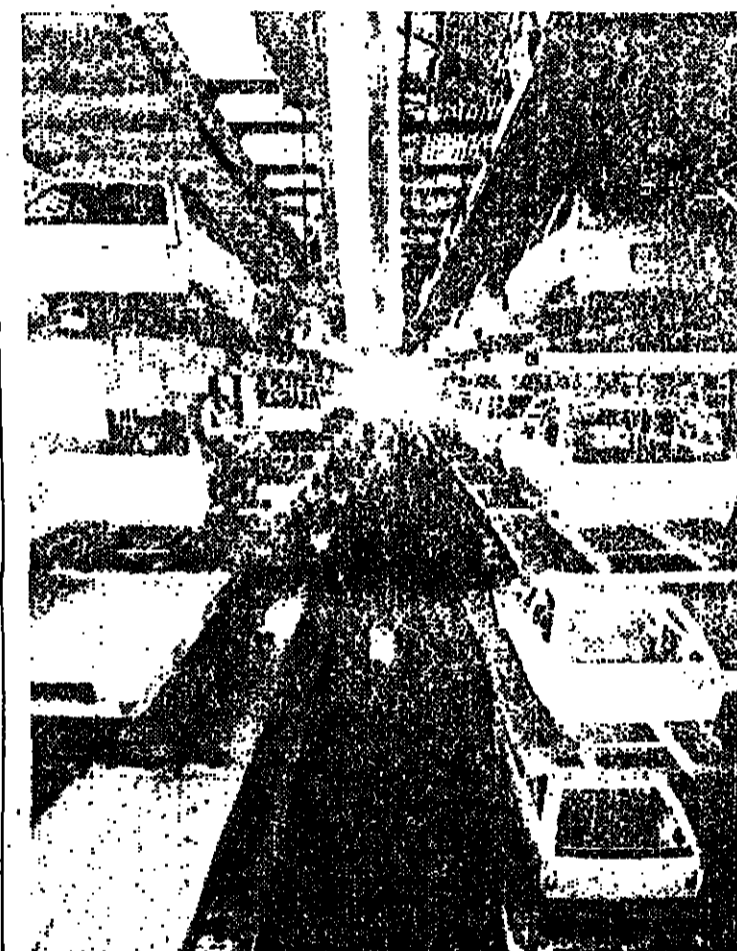


CONTROL SYSTEMS

Depending on the type of software and on the training method, industrial robots are divided into several categories: repetitive robots, numerically controlled robots, computer-aided robots, programmable robots, intelligent robots, etc. Since 1980 the Romanian Institute of scientific research and technological engineering for automation (IPA) has developed three generations of numerically controlled robots equipment: the SICOR equipment with inductive minicomputer, homologated for machine tools and continuous welding; NUMEROM 670 — a device made in a multiprocessor structure, cheaper than the previous one because of its typified modulation but equally reliable in point of performance, and the up and coming NUMEROM 770 for the control of more sophisticated robots.

The first control system, SICOR, was improved for RIF 0.2 (made by Automatica Enterprise), RIF 25 and RIF 63 (made by ICSI-TCH) while NUMEROM 670 was used for the Autobloc (designed and manufactured by Brasov Truck Enterprise) and REBUS 10 and RIF 25-10 E (made by ICSI-TCH). "The experience gained, starting with equipment, design and their introduction in production proves that the solutions of creating the installations making up the artificial intelligence are very complex," shows Lili Alexandra, scientific researcher at IPA the digital control equipment section. "Specialists of the institute are now trying to create an equipment for the recognition of AVIS images in MULTIPROM solution and also artificial intelligence modules with applications in industrial automation. IPA also makes flexible lines for automatic assembly with manipulators and robots. Our whole activity in the field of robotics is in fact carried out in the perspective of integrating production on a computer (CAD).

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A NEW GENERATION

At the Institute of Scientific Research and Technological Engineering for Computer Technology and Informatics (ICSI-TCH), the researchers' attention is focused on obtaining the most advanced robots, equipped with evolved sensors, meant for the applications of assembly-mounting and other complex industrial applications. These robots are: detector systems for industrial robots and industrial applications in general (VEDA); higher-level languages and action planning systems for robots; computer-aided design systems for industrial robots and robotized systems (CAD). Engineer Magda Radu explained: "Detector systems will be used for the inspection, recognition and automatic measuring, the management of technological processes, of industrial robots, and according to the applications, it has in view two main programming systems: an exclusive system for industrial applications and a system with more general character for improved FELIX PC professional personal computers. The CAD system has, among its advantages, the fact that it eliminates the construction of models, 80 percent of the operations necessary for the construction and programming of robot systems being made by the manipulation of graphic models."

These research directions of ICSI-TCH are the first steps made in Romania for the production of a new generation of advanced robots. The system has artificial intelligence elements; it is made in a MULTIPROM solution (typical module system, AMS bus, printed circuit boards of the double Eurocard type) and ensures the simultaneous control of two robots.

Prepared by MILANA MIHAESCU ■

A REMARKABLE ENGINE EXPERT

Pilești hosts a higher educational institute which, though modest in size and having commensurate labs and workshops, boasts a remarkable outflow of ingenuity. A bogus station and a biogas-driven electric generator, methane and oil-gas fueling devices for tractors and cars, multipurpose vehicles fitted with ingenious devices saving up on fuel, exceptional ideas turned into simple yet useful apparatus, and tools — all these make up the educational unit where the teaching staff, at

keeps finding something to alter. For instance, together with his students, he developed an economizer impoverishing the gas-air mixture in fueling cars. The result: Dacia-1300 cars thus fitted rarely exceed eight litres of gas per hundred of kilometres driven in towns. Or: the so-much disputed variable distribution — a technology making Dacia-1300 cars need no more than four litres per hundred of kilometres. The system is sure to find drivers willing to try it and the invest-

mentally thrown away. ...Inertial devices can take over the kinetic moment of an engine in movement and can reproduce it when needed, starting, without the use of a battery, other engines — said the expert on another occasion. The Ministry of Agriculture and Food Industry got the message, helping the accumulator industry. ...When starting the engine in the morning, the piston's movement in the cylinder starts without lubrication. A short,



mile or — in certain variants — multifunctional. Thus, fuel economy, part recovery, the logic reduction of the hood and boot, the possibility of filling the car with both gasoline and methane gas add up. Pilești university cars become, with small expenses economic, reliable, profitable. ...And a conclusion: not al-

ways big, spendthrift institutes with big wage funds bring the expected revolution and improvements to the world. And very often, ideas starting from gifted minds turned by golden hands into unexpensive tools, apparatuses, devices, machines and technologies prove useful to man's civilization.

LIFE-GIVING WATER

An old Romanian fairy-tale says that Prince Charming, after fighting the dragon, nursed his wounds with water from a life-giving spring. His wounds healed and, the story has it, Prince Charming recovered his strength. That is the way the story goes. But the truth is that, according to some Romanian folk traditions, certain springs have really miraculous properties. Villagers know it and often treat themselves with this mysterious life-giving water. ... This was the starting point for the investigations conducted by Timisoara researchers Gheorghe Lucaci and Vasile Abrudan and by dr. Ion Mircea of Bucharest: they noticed that under certain circumstances water pulsates! Hence the idea of the existence of some water components, the development of an adequate apparatus and the emergence of water A, water B and neutral water, followed by a patent for this surprising application of the laws of biophysics to folklore! In water A, a leaf remains green for scores of days; in water B, a liquid shown on a tv screen the process takes place in the ordinary H₂O, that is, pulsations like heartbeats — living water indeed! — which could be per-

ceived by those who attended the April 1989 symposium in Timisoara or the 1990 Mureș Congress held in Turbuck in August 1990. In water B the leaves quickly wither and die, processes occur which obliterate life. ... The idea and the original water dissociating method were scientifically acknowledged by a patent granted by the Ministry of Inventions and Trademarks (OSIM). As for the biophysics medicine will derive from water A, from this life-giving water mentioned in old fairy-tales, I think they are obvious: it simple and unexpensive therapy will soon be accessible to everyone. ...

It was also Gheorghe Lucaci teamed up with Vasile Abrudan that created a few dozens of patents for most varied purposes. Here is one of them: a magnetotherapy device, a specially arranged magnet system in which, when applied to the wrist, a 2 or longer duration of the bioenergetic in the human body, modifying their propagation speed in the patients' peripheral cholinergic sympathetic fibres. This small, very simple and cheap apparatus patented by OSIM has been used to treat a few thousand gastritis, duodenitis, gastric and duodenal ulcer patients!

Also Lucaci and Abrudan, approaching power generation questions, have proposed a patent for a highly unusual combustion cell. I shall briefly describe it here: a 50 litre test probe sheet vessel; a set of bipolar electrodes whose plates are impregnated with stainless steel, manganese and tellurium catalysts in certain proportions; the electrodes are arranged in a series and in parallel; a fuel mostly made of steel, processed according to a patented technique; the fuel is poured into the vessel, from which a jet loads to an ordinary boiler; the plates are impregnated with the fuel; the vessel is shut; two wires are attached to the ends of the electrodes. The result: everything starts pulsating; the three stages of the process, a few hours, and the energy generated, during the interval will power a lighting lamp, a radio set, a heating device, a small refrigerator, and so on. (Chapman and Chapman, 1990). The device is likely to become an ideal household appliance, especially for isolated houses.

Photo supplied by ALEXANDRU MIHAI

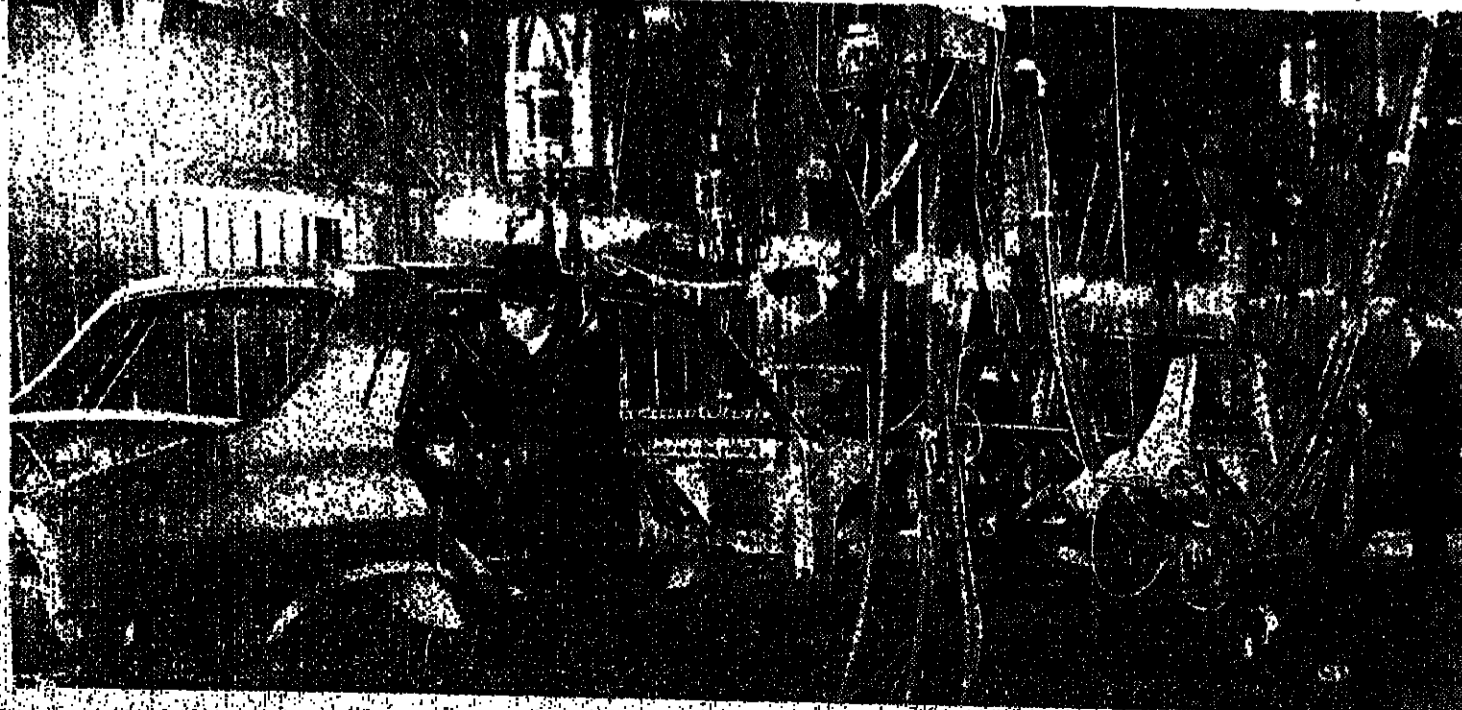


head with the Institute's managing board, are striving to get students not only to reproduce information learnt from courses and apply it on mechanisms and machines, but also to try each time to "uplift" dissect things and analyse them, suggest a way to improve them, replace them if need be, to preserve a dynamic dissociation of the well-done, yet continuously improvable, thing.

An exceptional expert is to be found among the Pilești professors: associate professor Vasile Dumitrescu. He knows all about cylinders, pistons, segments, valves. Explained by him, the fargon of Otto, Diesel or Wankel engines, the Carnot cycles become easy to understand even to beginners. The world of machines seems to obey him unreservedly. Tamed, the engines gur in his palm, while he

ment will almost instantaneously pay off. ... Here is something else: a gem called Student, a small-capacity car built entirely by the Pilești students and teaching staff on the basis of the design authored by V. Dumitrescu, with a body (made of fibre glass) having a more successful aerodynamic form than the Dacia cars and a small-size Dacia engine of barely two cylinders. For several years now the mini-car has been driving on highways, transporting as much as four passengers, undergoing tests and, while consuming just 2-2.5 litres, standing comparison with any similar car. ... The oil filters are recoverable. Vasile Dumitrescu assured us a few years ago, backing his statement with theoretical and practical demos. As we know, after being used, filters are ro-

very short period, says German specialist Grünwall, enough to consume the equivalent of 50 km from the engine's life by simply turning the ignition key. Amazing! Can't anything be done? Yes, said the Pilești specialist — a device which can be charged with oil under pressure (pushed by the very engine) and discharged in the morning by means of a valve, directly in the engine, before its ignition! Another idea: the installation of a compensation counterweight/antagonist, as engine specialist V. Dumitrescu calls it — can remove vibrations, so harmful to the shaft's life and efficiency. In Pilești, at the higher education institute, shafts have counterweights. In the morning, engines are pre-oiled — simply by means of a cable. The cars have almost all of them, new bodies — aerodyna-



PHYSICIAN-PATIENT WORDLESS COMMUNICATION

In a general acceptance, any examination made by the physician cannot be conceived without verbal communication. Nevertheless, science has confirmed that, beyond words and traditional tests, there are also

other signs, that can be used in establishing diagnosis. The skeptical attitude (taken sometimes even by learned men) started to fade away. Extra-verbal communication in medicine receives a more explicit



Dr. Virgil Enăscescu, head of the psychiatry department of the Satu Mare Municipal Hospital, supervising a patient's computer-assisted handwriting test.

THE LANGUAGE OF MAN'S VOICES

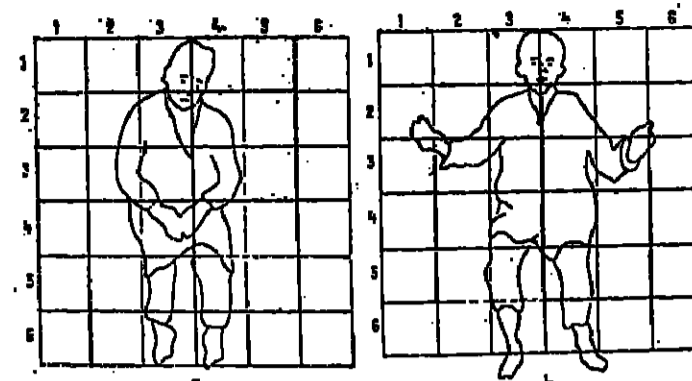
THE LANGUAGE OF MAN'S VOICES

Beyond the strict contents of words, even in an everyday conversation, the sound subtleties — the voice — has an overwhelming importance for therapy. That truth was confirmed, once more, by researches carried out under the aegis of the Academy of Medical Sciences in Romania.

In the first months of my residency, remembers dr. Virgil Enăscescu, the head of the psychiatry section at the Municipal Hospital in Satu Mare, "I was amazed by the exactness and rapidly with which the specialist physician could discover his patients' ailments just by talking to them over the phone about the weather and their families. One March evening in 1971, I tape-recorded

the voices of all patients interned in the hospital with the same diagnosis; the next day the common physical spectrum, the model of talking characteristics of the respective diseases appeared on an electronic oscilloscope."

The physical spectrum of the voice is rendered by the frequency variations corresponding to the pitch and variations of tones in a dynamics studied in time. Their image is called vocogram. Psychologists recognize the speech message and even the individual vocal print by analyzing such images. In computer technology and the one governing artificial intelligence, the analysis of specific spectrums for each phoneme making up words leads to the computer's deciphering and recognizing of the verbal message. This type of analysis ignores the voice's individual variations and those given by various accidental states of the same person, as a useless "noise". ...But, that very "noise" is the



The first grid used in 1971 had nine (3 x 3) squares/quadrants covering hand movement area on three positions horizontally and three vertically, making a total of 36 squares on the grid.

REVEALING GESTURES

Thanks to the results obtained by scientifically studying the "non-verbal language", the first Medical Research Centre with Computer Technology in the country was created near the Municipal Hospital in Satu Mare, in 1978. That event was simultaneous with two others: the opening of the National Invention Salon (1978) in Satu Mare and the award of another invention patent to dr. Virgil Enăscescu for "Automatic Analysis Equipment and Method of Extra-Verbal Communication" (1979).

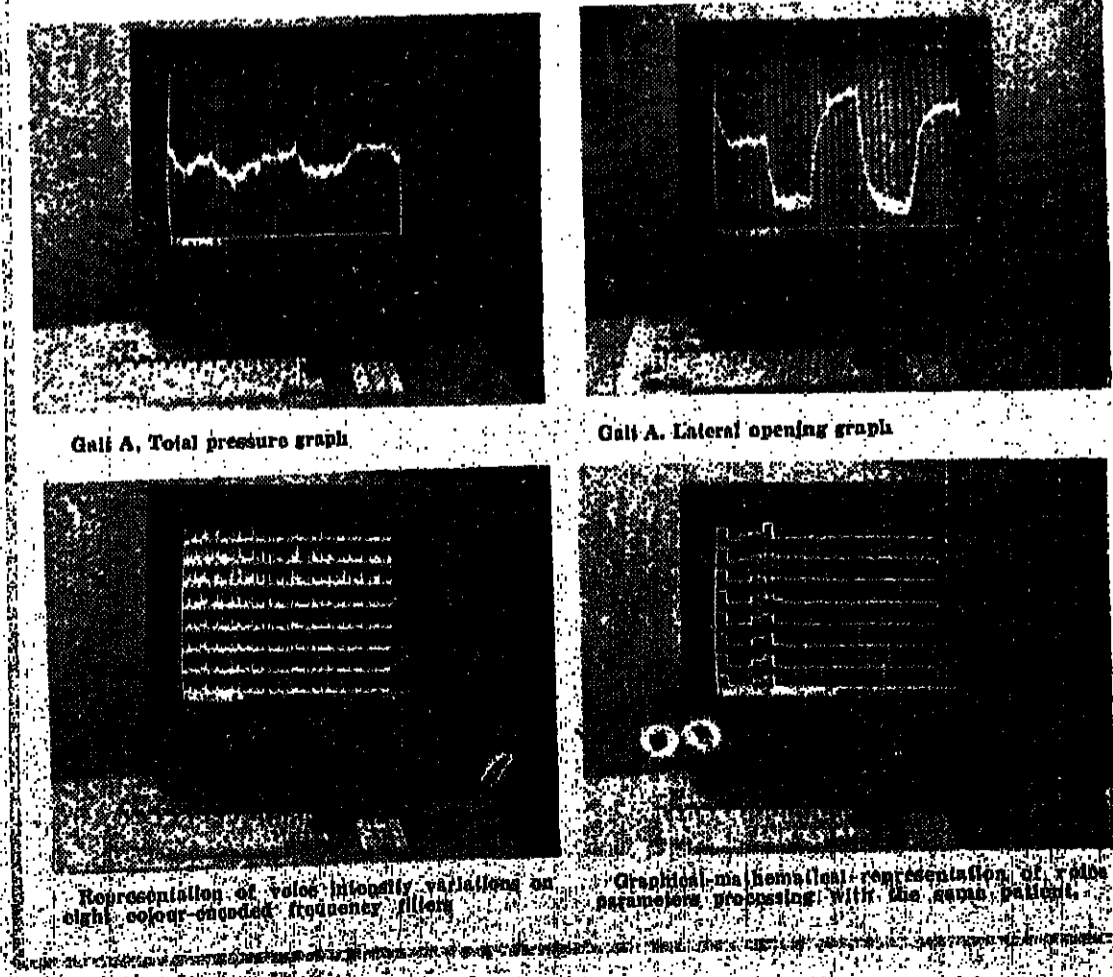
Therefore, modern, objective investigation of data communication by non-verbal ways had all conditions to progress. That happened by the use of computer technology in determining characteristics of writing and drawing. Or a more recent date, the analysis system of the gesture distribution proved to be a very useful collaborator for the neurologist or psychiatrist. By connecting a TV camera to a computer the interpretation of gestures leads to revealing disorders about what is happening at a certain moment in the "black box" of the amble, subtle and sometimes contradictory hot core of the information metabolism.

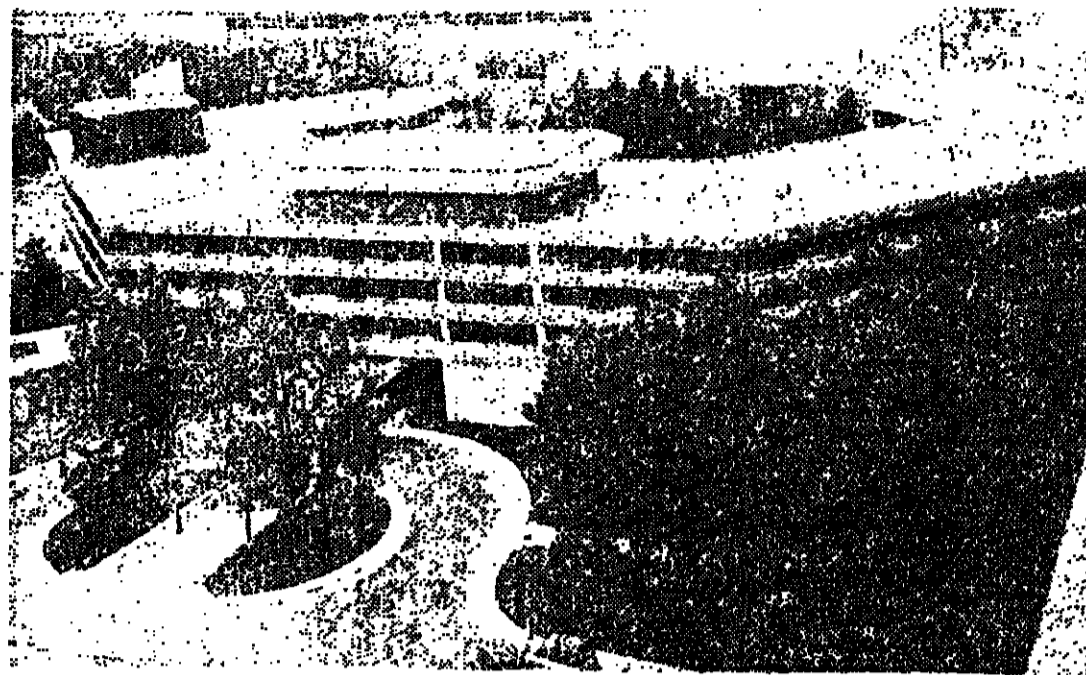
THE SELF-CONTROL OF ALPHA WAVES

Therapy through music or by means of the Sobush training are already known and generalized methods in the whole world. The new, at the Medical Research Centre with Computer Technology in Satu Mare consists of the creation of the multidimensional psychotherapy lab. This lab first established through the physician-patient dialogue that the symptoms (objective or subjective) of the disease are generated by disorders of the neurovegetative system. According to each case, the patients use either a room where drawings in vivid colours are projected with orange, red, dominant colour, later to striking melodies and breathe an air saturated by positive ions, or on the contrary, are in a relaxing environment with a green field, a desert music, breathing negative ions and resting in sedative magnetic fields. By means of the bio-feedback apparatus the patients can survey the functional state of their brain learning how to control the installation of the relaxed state. Even certain patients suffering from epilepsy are able, by using the bio-feedback equipment built in Satu Mare, to control the onset of alpha waves and avoid the imminent periodical crises.

Dr. Virgil Enăscescu's invention, and his scientific, medical and his understanding of a so-called "bio-synchronisation" industry, helping us to know ourselves better and thus become healthier.

RUCIANA CROSTU-POPESCU
VIOLETA GHEORGHIU
Photo: IAN DRAGAN





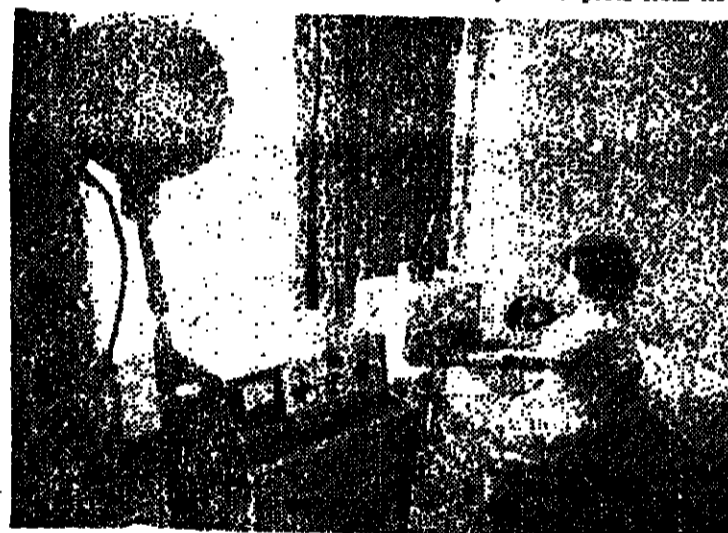
THE MAIN CHARACTER: GEROVITAL

Next month, between June 9-11, Bucharest will host the National Gerontology and Geriatrics Congress. The proceedings to be held in the lobbies of Intercontinental Hotel will focus on the following topics of great scientific interest: the biology of aging, cerebral aging, the elderly's participation in social life. The highlight of the Congress will probably be the symposium which will debate numerous aspects referring to the present and future of the Asian therapy.

The National Institute of Gerontology and Geriatrics, jointly with the Ministry of Tourism has organized a programme of scientific and tourist activities, which includes, among others, a trip to Roman town (Neamtu county) where a few years ago an Old Age University was set up, under the aegis of the above-mentioned Institute. The participants in the Congress are to deliver lectures there. The National Gerontology and Geriatrics Congress is to be attended by 500 experts from Ro-

mania and numerous other countries where the Gerovital and Aslavital medicines, just like the therapy bearing Academician Ana Aslan's name, are well known and successfully applied: Italy, Spain, Greece, Portugal, the USSR, Argentina, Brazil, West Germany, Switzerland, France, the USA, Belgium, Ecuador, Israel, Bulgaria, Czechoslovakia, India and Mexico which is to host next year's Congress.

Let us also mention that Academician Ana Aslan, today aged 81, who discovered the beneficial effects and action of procaine in fighting aging phenomena, who created and patented at home and abroad two highly important products meant to prevent biological aging, is the head of the Geriatrics Institute in Bucharest set up in 1982 as the first body of its kind in the world. Its way of organization was recommended by WHO to all similar institutes subsequently founded in various countries.



AN INGENIOUS AND ENTERPRISING PLANE MAKER

He has been flying since he was 15, he has practised gliding in Cluj, he has been a gliding instructor, he has practised parachuting since he was 17, and he took up hang-gliding at 41; he is the first to have built and used hang-gliders in Romania. Thanks to him, over 500 persons have been trained in this field and have done over 2,800 flights. This is about all which accounts for the Foul Tisandier Diploma that the International Aeronautics Federation awarded to Arpad Kics of Arad in the fall of 1985, for the almost 40 years in which he has ventured on the wings of the wind. Previously, he had also got the C silver badge from the IAF, which is awarded for a continuous five-hour gliding, over a 50-km distance and going up to 1,000 m, conditions that to a beginner seem impossible to fulfil.

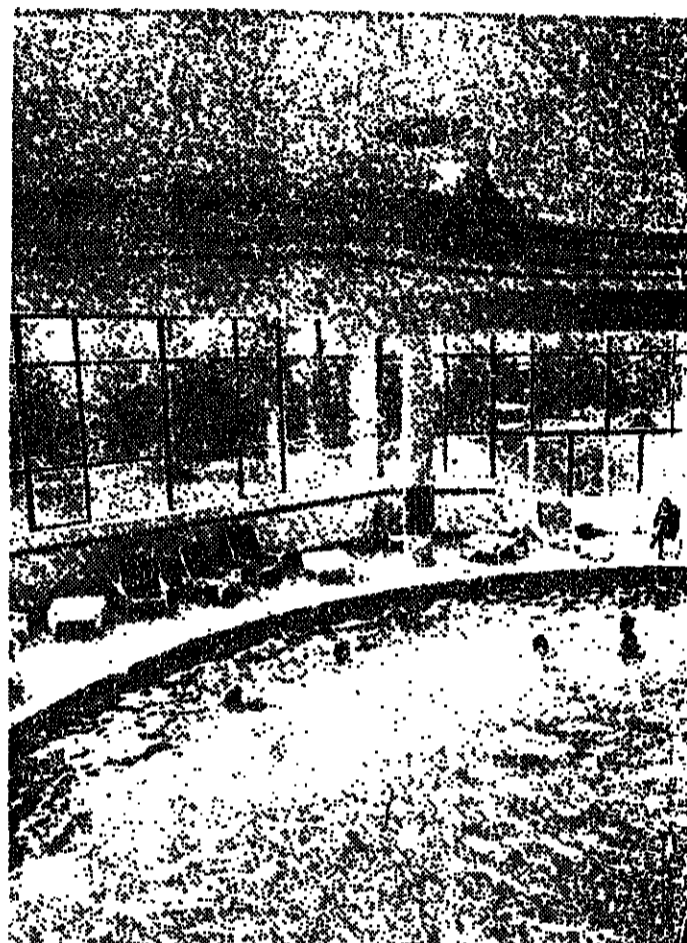
In spite of all this, he felt he had done too little for gathering gliding followers and his discontent made him pass on to the building of a very light plane, Conrad type, piece by piece, on his own account. This design has been mentioned in the History of Aviation, that has recently appeared. Among the benefits of this apparatus, Arpad Kics points out the noiseless one that, when handled carefully, it does not get in anybody's way, unlike other apparatus, its depth is in its

ceel at the front. Even if one is not a perfect pilot, one can fly with this small-height apparatus. Besides pilot's training, it can be used for supervising the traffic, taking photographs of terrain, and above all, in agriculture, performing operations from uniformly spreading fertilizers to finding out swampy areas. In its constructor's opinion, the apparatus will undergo flight tests at the beginning of autumn, then will be patented, contracted and mass produced. Another benefit is that it has a reduced fuel consumption, like a motorbike (in the Arpad Kics version, its engine is that of a MZ 250 motorbike) and it does not need special adjustments to take off and land. When he finishes the construction of this ultra-light apparatus, Arpad Kics will not stop designing and building new apparatus. In his workshop, in the villa at 28-G, Dumitrov street in Arad, he has already started making a model of a variable pitch at the ground to replace an important device for sports flights. To Arpad Kics, who has dedicated himself to a "gliding" pursuit, unless you come from gliding, there is no walking in the air, from the "impossibility" he has discovered for himself and for others, through his wonderful flying apparatus.

IOAN T. MORAN

MEDALS FOR ROMANIAN GYMNASTS

At the European junior gymnastics championships held at Avignon, France, the Romanian sportmen won eight medals: one gold, five silvers and two bronzes. Gabriela Potorac secured the gold medal and European champion title in the beam event, with 19,503 points. She also clinched two silvers in the individual all-around competition (39,330 pts.) and in the uneven bars (19,688 pts.), and a bronze in the floor exercise (10,675 pts.). Eugenia Popa won the silver medal in the beam event (19,375 pts.) while Cristina Bontas obtained the bronze medal in the individual all-around competition (39,030 pts.). In the men's contest, Cristian Brzezanu and Adrian Ciud secured the silver medals in the floor (19,150 pts.) and vault (10,175 pts.) events respectively.



THREE GOLDEN BELTS

Bucharest hosted the 17th edition of The Golden Belt International boxing tournament. The competition was attended by sportmen from ten countries, including world and European champions, national champions, winners of prestigious contests. Of the nine Romanian boxers qualified to the final, Daniel Dumitrescu, Francisc Vayng and Miklos Palcs obtained golden belts. In a remarkable final bout, featherweight Daniel Dumitrescu clearly outboxed R. L. Gonzalez from Cuba. In the first round, the Romanian countered the Cuban's blows rather timidly but was at his best in the next two rounds when he dominated his opponent visibly, winning a spectacular 5-0 points decision.

Repeating his Havana feat, where he won the world title, inside the distance, junior world champion Francisc Vayng floored Cuban boxer A. Hernandez in the Bucharest final with a crushing right hook in the first round.

Demonstrating their remarkable hand speed and punching power in the finals, Daniel Dumitrescu and Francisc Vayng fully justified their selection for the Olympic team.

The last Golden Belt of the Romanian sportmen was won by super weight Miklos Palcs. Our representative took the belt after the referee halted the bout in the first round considering Bulgarian F. Stojmenov was too badly injured to continue the fight.

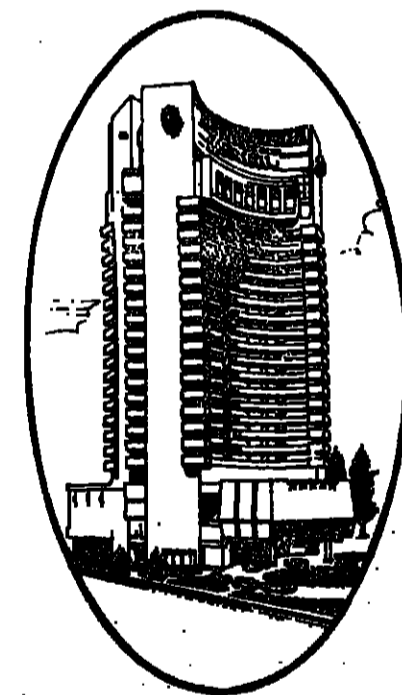
Other Golden Belts at the 17th edition of the international box tournament were won by S. Ulimtsev, E. Akimov, V. Karpukha, R. Sablov (the USSR), L. Marinov, S. Todorov (Bulgaria), M. Yribarren, J. Gonzalez (Cuba) and N. Nardello (Italy).

Photo: NICOLAE PROFIR ■ ELENA MIHAI ■



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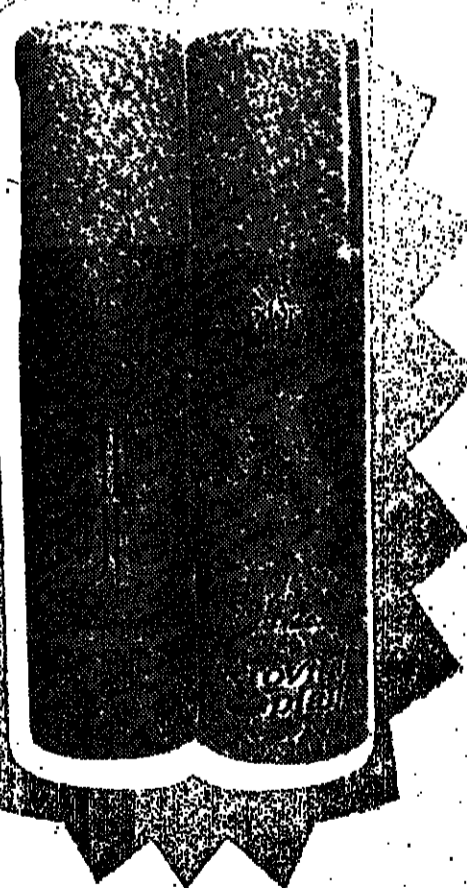
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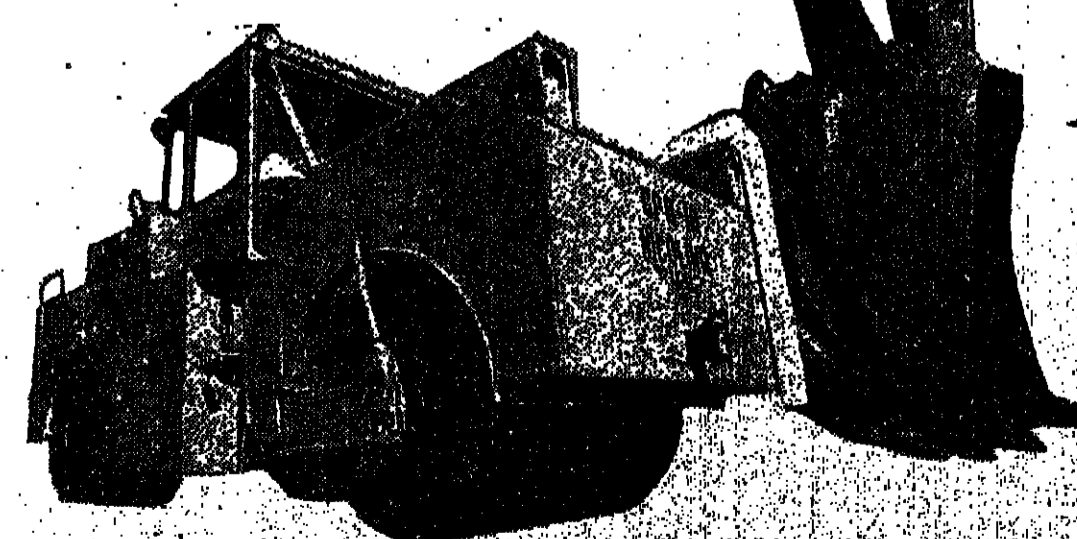
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